extends through the source, drain, and channel regions, the channel, source, and drain regions together comprising an active region of the substrate; and

a doped region formed in the substrate and completely surrounding the active region, the channel region having an effective width defined by a variable doping profile in the first direction with respect to the doped region.

2. (Amended) The field effect transistor according to claim 1, wherein an interior edge of the doped region is spaced laterally from the channel region.

3. (Amended) The field effect transistor according to claim 2, wherein the effective width is a function of a distance of the doped region from the active area.

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6. (Amended) A transistor structure, comprising:

a first field effect transistor integrated on a semiconductor substrate having an active area, the first field effect transistor including:

a source region and a drain region formed in the semiconductor substrate; and

a channel region interposed between said source and drain regions having a predefined nominal width in a first direction that is perpendicular to a second direction that extends through the source, drain, and channel regions, the channel region having a first effective width defined by a variable doping profile in the first direction; and

a second field effect transistor coupled in parallel to the first field effect transistor, the second field effect transistor having a second effective width.

7. (Amended) The field effect transistor of claim 6 wherein the second effective width of the second field effect transistor is smaller than the first effective width of the first field effect transistor.

8. (Amended) The field effect transistor of claim 6 wherein the second effective width of the second field effect transistor is the same as the first effective width of the first field effect transistor.

9. (Amended) A field effect transistor comprising:

an active area formed in a semiconductor substrate;

a source region and a drain region formed in the active area;

a channel region interposed between said source and drain regions and having a first nominal width in a first direction that is perpendicular to a second direction that extends through the source, drain, and channel regions; the channel region having a variable doping profile in the semiconductor substrate extending in the first direction from no additional dopant in a center of the channel region to a concentrated amount of dopant at edges of the channel region, wherein an effective channel width of the channel region is relative to an amount and concentration of dopant in the channel region;

a first doped region formed in the substrate extending along an entire first side of the active area from a position beyond the source region in the second direction to a position beyond the drain region in the second direction; and

a second doped region formed in the substrate extending along an entire second side of the active area from a position beyond the source region in the second direction to a position beyond the drain region in the second direction, the second side being opposite to the first side.

10. (Amended) The field effect transistor of claim 9, wherein the first and second doped regions extend beyond third and fourth sides of the active area, the third and fourth sides being opposite to each other and transverse to the first and second sides.

11. (Amended) The field effect transistor of claim 10, wherein the effective channel width is a function of a distance between the first and second doped regions.

Please add new claims 13-15 to read as follows: